California
DEPARTMENT OF TECHNOLOGY

California Information Technology

Annual Report 2019

Gavin Newsom,
Governor

Julie Lee,
Acting Secretary, California Government Operations Agency

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Director, California Department of Technology
State of California Chief Information Officer

LETTER FROM THE STATE CIO AND ACTING DEPUTY STATE CIO

This 2019 Annual Report puts into context the people and elements of State technology that blend together to create solutions that serve the people of California through an efficient digital government. Some of our key responsibilities include: overseeing the delivery of innovative IT projects, hosting cloud-based platforms and services, and securing Californians' sensitive personal data. This report illustrates how the State measures IT performance, secures information assets and sensitive data, as well as how it all ties into the statewide strategic plan, Vision 2020.

The California Department of Technology (CDT) views the use of smart technology and digital services as a necessary means to engage state residents while improving service delivery. CDT is involved in all aspects of state technology, including: strengthening the state's information security programs to protect sensitive and critical data; using Geospatial Information Systems (GIS) to aid in firefighting and alert residents of impending power shutoffs; advocating for broadband in rural areas to provide educational and economic equality; and much more. Our greatest asset supporting these responsibilities is a skilled and dynamic technology workforce that will continue to modernize and improve how we deliver public services.

We look forward to 2020 and the opportunities it may bring for our statewide public and vendor IT community. Regardless of the challenges that lie ahead, we will remain dynamic and agile in the delivery of quality services as we work to advance a California for All.

Let's move forward together.

Amy Tong
Director, California Department of Technology
State of California Chief Information Officer

Richard Rogers
Acting Chief Deputy Director, California Department of Technology
Acting Deputy State of California Chief Information Officer

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through secure, effective and innovative technology solutions.

PRINCIPLES

Strive for Simplicity ✶ Put Customers Front and Center ✶ Be Innovative ✶ Focus on Outcomes ✶ Own it ✶ Take a Statewide Perspective

CALIFORNIA TECHNOLOGY STRATEGIC PLAN - VISION 2020 GOALS

Create One Digital Government

Create One Digital Government

Increase customer satisfaction through improved responsiveness, efficiency, and effectiveness of government services.

PRIORITIES

1. Increase operational agility and performance in the delivery of technology services.
2. Improve the design and delivery of digital services.
3. Foster collaboration and boundaryless behavior.
4. Transform and simplify the way government does business through innovation.
5. Accelerate the adoption of common technology platforms and shared services.

Ensure Secure Delivery

Ensure Secure Delivery

Advance the maturity of information security across California government.

PRIORITIES

1. Protect California's information assets and maximize data access.
2. Develop a robust and collaborative security risk reduction strategy.
3. Develop an enterprise approach to security leadership and governance.
4. Improve and invest in security capabilities to protect mission-critical systems and data.
5. Foster a security-minded culture throughout California's workforce.

Build a Dynamic Workforce

Build a Dynamic Workforce

Build a dynamic technology workforce that takes pride in delivering quality services and innovative solutions to their customers.

PRIORITIES

1. Create a culture of innovation and collaboration.
2. Develop the capabilities of both technology leaders and functional experts.
3. Improve employee engagement and increase retention of quality employees.
4. Expand our pool of skilled and experienced technology professionals.
5. Foster a diverse and unified technology community.

INTRODUCTION

California's State government aims to be responsive to the needs of all of its residents. Its vast geography and diverse population demand the state's Information Technology (IT) community continue to be not only responsive, but innovative, productive and accountable.

This annual report measures the performance of the state's IT community over the past year based on the shared mission, vision and guiding principles established in the statewide information technology strategic plan, Vision 2020. The annual report is measured in four primary domains:

1. Improving Public Safety and the **Security** of Sensitive Information Assets
2. Enabling Successful **Project** Establishment and Delivery
3. Fostering a Dynamic and Unified Technology **Workforce**
4. Providing Efficient and Effective Government Services through **Innovation**

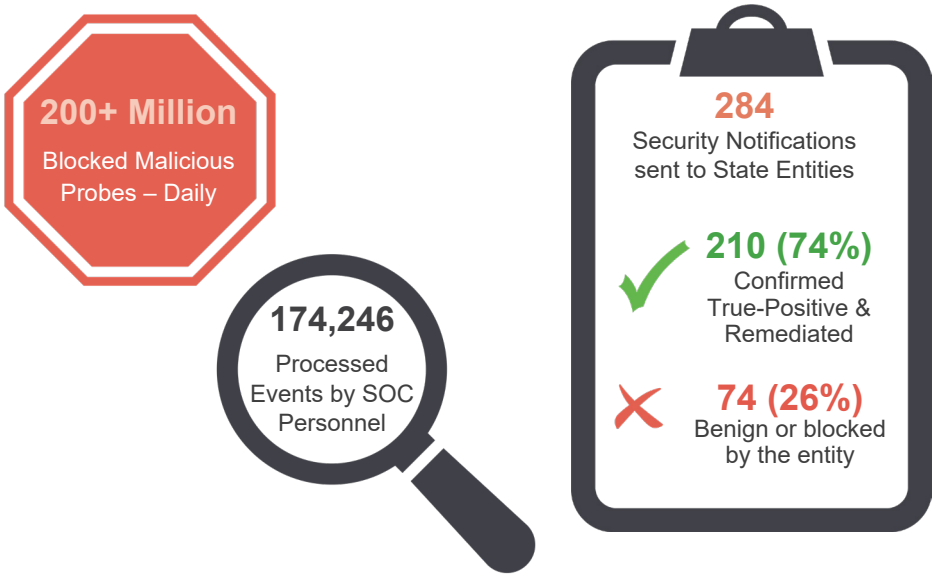
These technology performance areas are the culmination of the collaboration between the California Department of Technology and the reporting IT organizations within state government, and, ultimately provide continued guidance and focus for the State's IT community to achieve its goals.

Performance Metrics

The following metrics are part of CDT's performance management framework. Performance targets were initially identified in the 2016 Annual Report. Subsequent reports show the annual measurements of progress in improving and enhancing the state's information technology program.

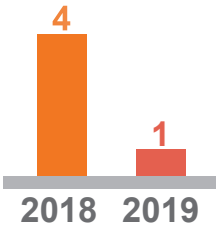
SECURITY

Malicious Activity Detected by the Security Operations Center



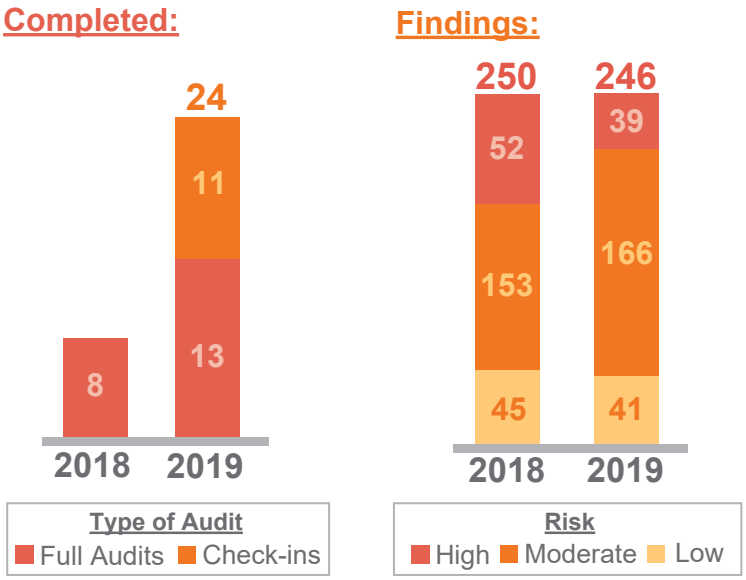
The number of malicious activities detected in 2019 by CDT's Security Operations Center (SOC) targeting the California Government Enterprise Network (CGEN) and other IT systems owned and/or managed by the State Data Center.

Number of Electronic Incidents Resulting in the Unauthorized Disclosure of Personal Information



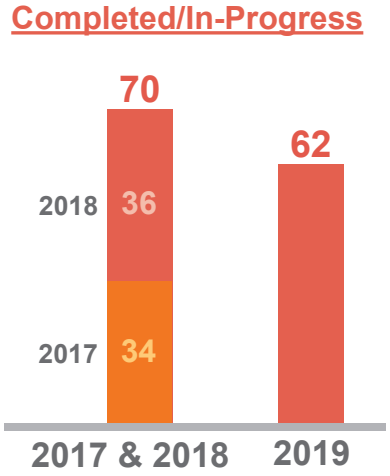
The number of breaches during the calendar year that involved Personally Identifiable Information (PII) contained in lost or stolen unencrypted electronic devices and storage media. This number does not include paper and verbal releases of information.

Information Security Audits (Policy Focused)



The number of Information Security Audits conducted by CDT and their corresponding findings. Each audit includes a comprehensive evaluation of the state entity's infrastructure and security practices to ensure compliance with state policy and federal standards.

Independent Security Assessments (Technical Focused)

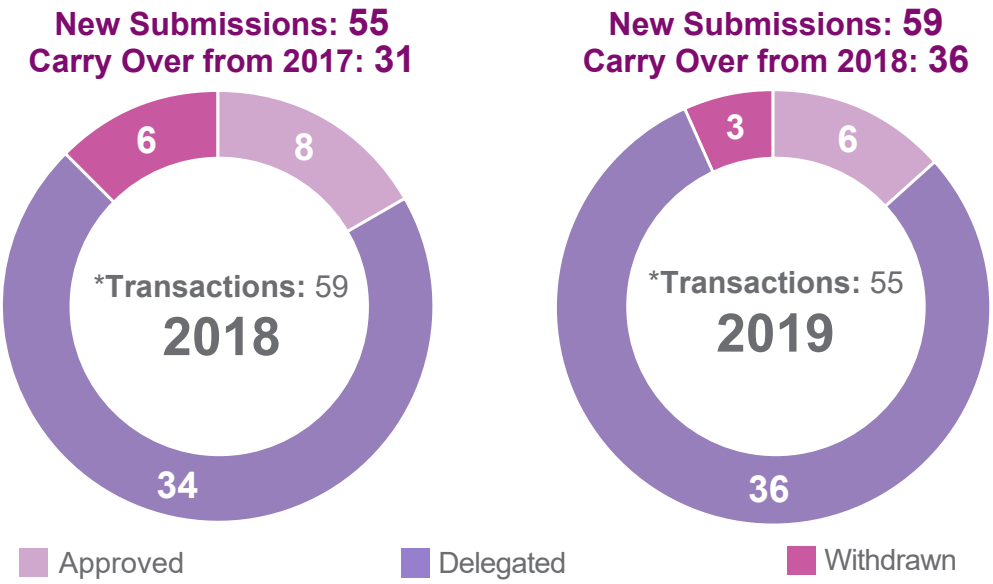


The number of Independent Security Assessments conducted by the California Military Department, or an approved third party, and a summary of their findings. Some focus areas include: asset management, continuous user training against Phishing attacks, and consistent patching for vulnerabilities.

Performance Metrics

PROJECT DELIVERY

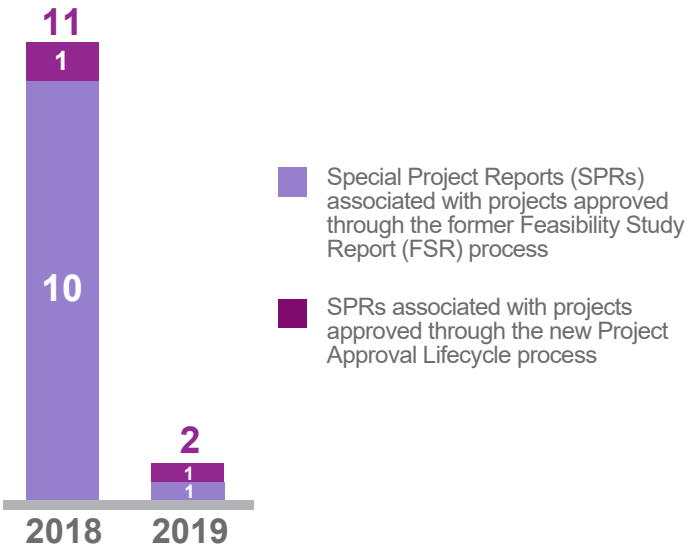
Number of Technology Initiatives in Project Approval Lifecycle



The annual workload results for CDT review and approval through the state's Project Approval Lifecycle (PAL). PAL is a multi-stage project planning and approval process that helps state entities develop a strong business case, clear business objectives, appropriate solutions, and more accurate costs and schedules. PAL provides flexibility to help expedite approvals for low-risk projects and build additional support for more complex, high-risk projects.

**Transactions: Number of projects "approved", "delegated", or "withdrawn".*

Number of Projects with Major Variances



The number of Special Project Reports (SPRs) submitted for non-delegated projects. SPRs are required for project schedule, cost, or scope variances in excess of 10%.

Large Projects Completed Within Schedule and Budget

The number of complex technology projects completed timely and within budget compared to latest approved schedule and budget (no more than 10% variance).

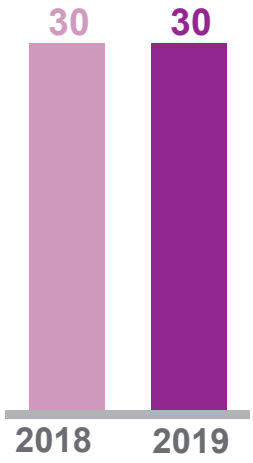
Performance Metrics

PROJECT DELIVERY

Median Duration of Competitive Project Procurements

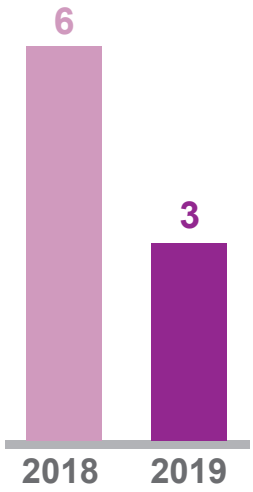
The median time it takes to complete a competitive technology procurement from initiation through contract award.

Number of Agile Development Vendors in the Pre-Qualified Vendor Pool



The Pre-Qualified Vendor Pool facilitates greater access to competent, user-centered resources while reducing solicitation time and cost.

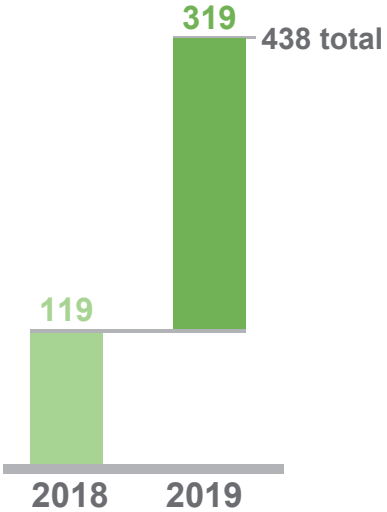
Projects Completed Using Agile Development Methodology



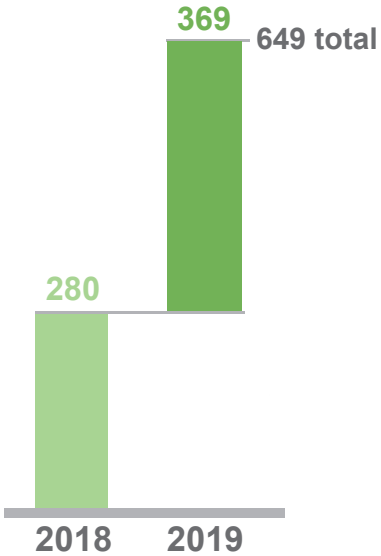
The number of technology projects completed using an agile development methodology. The agile methodology allows for adaptive planning, evolutionary development, rapid delivery, and flexible response to change.

WORKFORCE

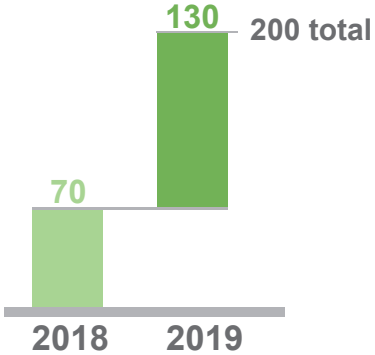
Number of Individuals Completing IT Leadership Training



Number of Individuals Completing Project Management and Procurement Training



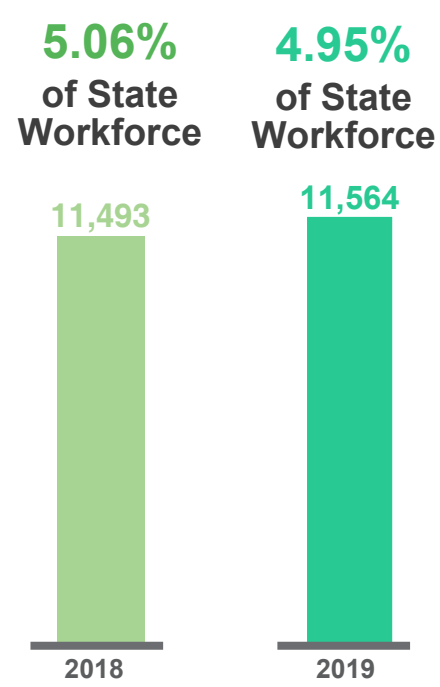
Number of Classes Offered through CDT's Training Center



Performance Metrics

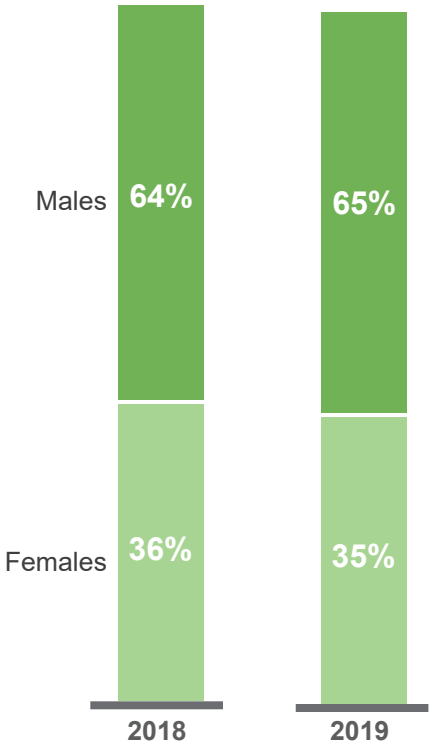
STATEWIDE IT WORKFORCE DEMOGRAPHICS

State IT Employees

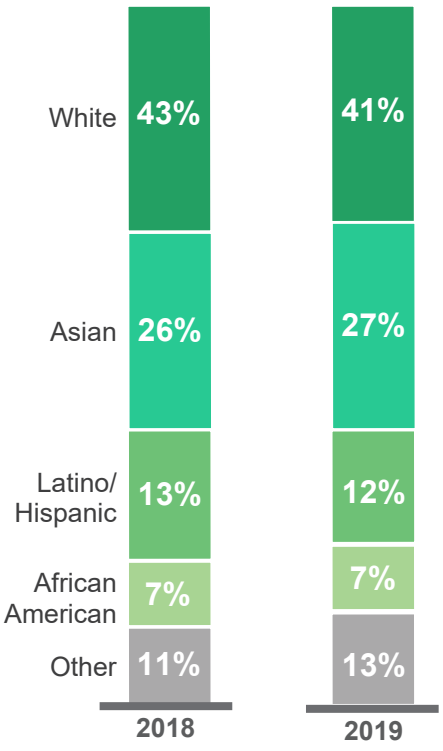


The % of State Workforce for 2019 decreased due to the total statewide employees increasing by 6,498.

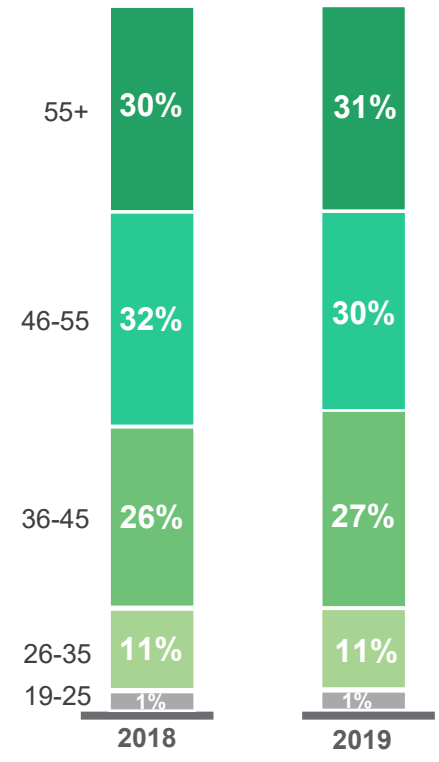
Gender



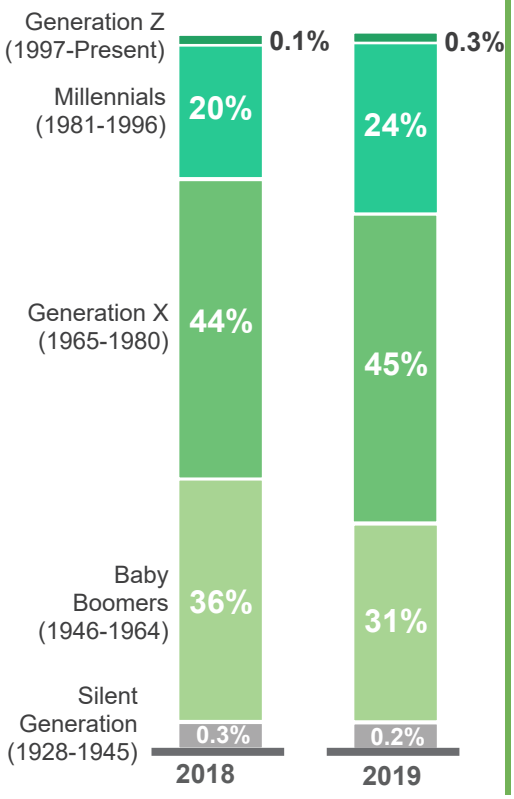
Ethnicity



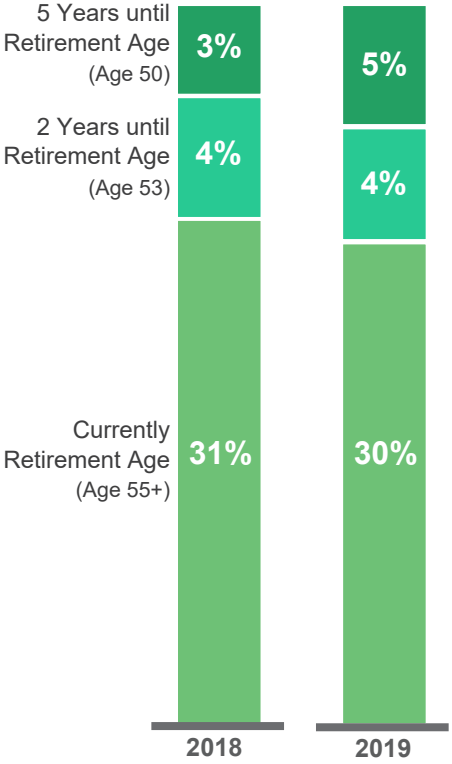
Age



Generation



Range to Retirement

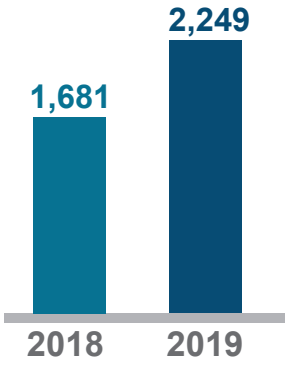


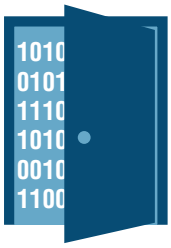
Source: *CalHR*

Performance Metrics

INNOVATION

Number of Data Sets Available to the Public

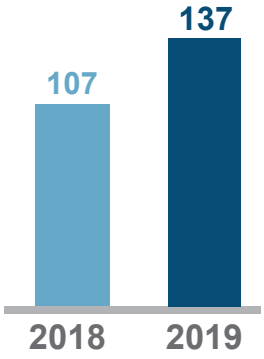




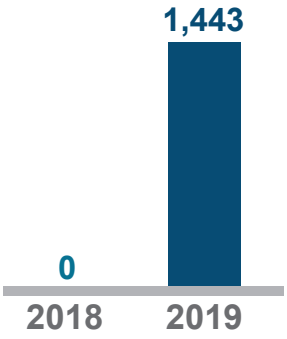
data.ca.gov

Number of State Contributed Open Source Code Sets

code.ca.gov



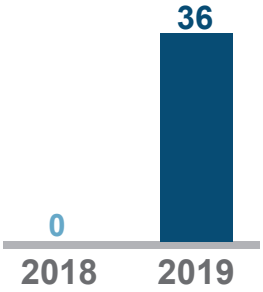
Number of GIS-based Data Sets Available to the Public through the Statewide Geoportal



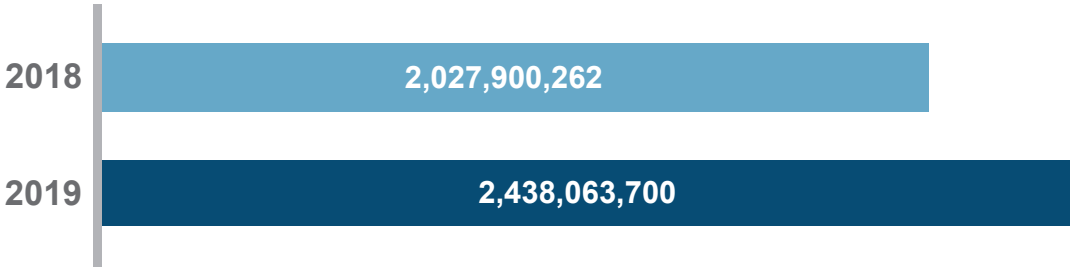
gis.data.ca.gov

Number of GIS Applications Available to the Public through the Statewide Geoportal

gis.data.ca.gov

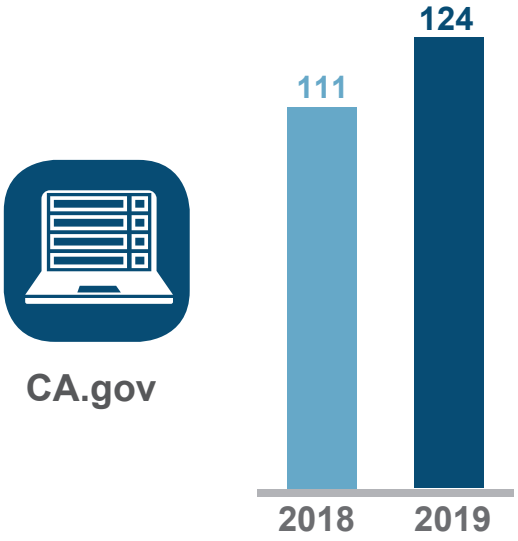


Number of Unique Page Views of All Websites Within the CA.gov Domain



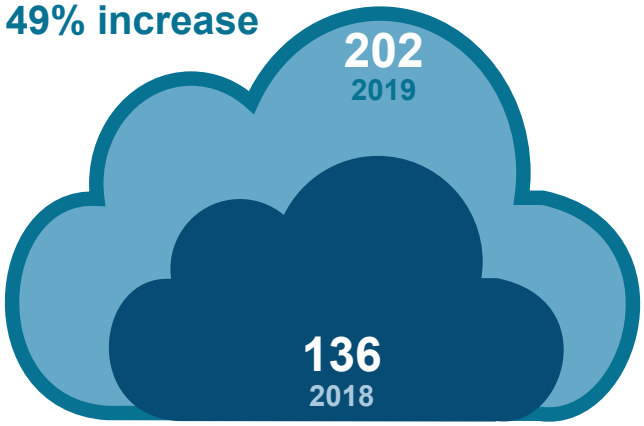
Performance Metrics

Number of Digital Services Accessible Through the CA State Portal



The number of digital services accessible through the California State Portal (www.ca.gov), a single navigation link for common public services.

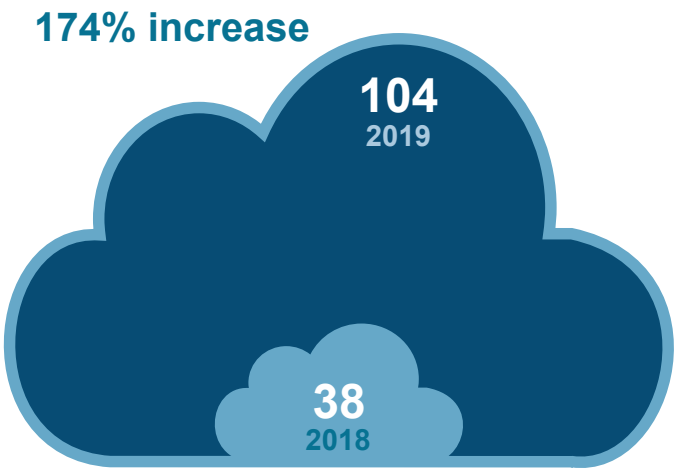
Number of Subscriptions to Software as a Service (SaaS) Cloud Services by State Entities Offered through the State Data Center



The cloud-based SaaS solutions used by state entities offered through the state data center as part of its Vendor Hosted Subscription Services (VHSS).

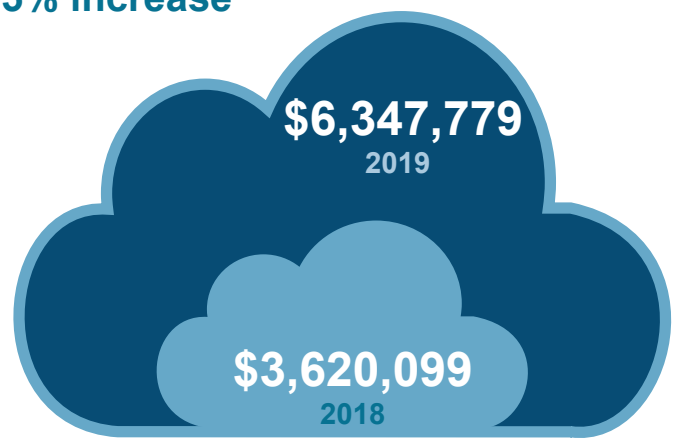
Number of Subscriptions to Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) Cloud Services by State Entities Offered through the State Data Center

Number of Subscriptions to IaaS/PaaS



The number of subscriptions to cloud-based IaaS/PaaS solutions by state entities offered through the State Data Center.

Total Subscriptions for Services Utilized



The total amount spent on subscriptions by state entities using cloud-based IaaS and PaaS solutions offered through the State Data Center.

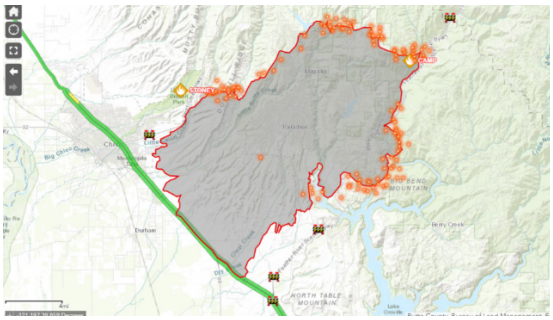
IMPROVING PUBLIC SAFETY AND THE SECURITY OF SENSITIVE INFORMATION ASSETS

California's government entities collect, process and store a huge amount of confidential information and data on computers and transmit that data to other government entities over telecommunication networks. The rapid growth of sophisticated cyber attacks demands that well thought out countermeasures are in place to secure sensitive business and personal information, as well as protect state and national security. Fortunately, California is one step ahead.

CDT is part of the California Cyber Security Integration Center (Cal-CSIC), a central hub of state cybersecurity activities comprised of four California organizations, including California Governor's Office of Emergency Services, California Military Department, California Highway Patrol and the California Department of Technology. This is another critical layer of prevention to stop cyber thieves operating under a simple concept: steal as much sensitive information as possible, while others look to 'hack' into a network, take control and demand a steep ransom. In its ongoing effort to thwart the attempts of hackers, California continues to develop new policies, strategies and initiatives to block even the most sophisticated intruders.

Saving Lives with Automatic Vehicle Location

As Cal Fire adapts to increasing fire risk, the department is investing in technology that will improve communications and situational awareness for emergency responders who are often in harm's way when dealing with large emergencies and fires.



The customized GIS implementations contain all roads in Cal Fire protection areas and cooperating counties.

That system, known as Cal Fire Automatic Vehicle Location, greatly improves the ability to track vehicle assets in near real time under harsh environmental conditions where vehicles can be isolated from standard information technology. This project involved several organizational programs of the department including; Information Technology Services, Fire Protection, Telecom and Fleet Management, as well as 21 regional operational units. To ensure success in areas where connectivity is poor, the department has partnered with the California Office of Emergency Services, Public Safety Communications Office for the Information Technology integration of VHF radio services, using standard information technology communications protocols.

Forensic Analysis and Support Team (FAST) Lab Provides Better Access

The California Department of Corrections and Rehabilitation's Office of Internal Affairs (OIA) and its Cyber Security Intelligence & Operations Center, stood up a Forensic Analysis and Support Team (FAST) lab to conduct forensic analysis for the purposes of gathering evidence in support of investigation requests. The lab is capable of forensically analyzing desktops and laptops, hard-drives, mobile devices, and network security events. If the OIA FAST team flags a potential alert, the staff will prioritize the case and determine if an official OIA investigation should be initiated.

The FAST Lab is strategically placed close to IT infrastructure and information security services, which creates a collaborative environment where investigators have better access to infrastructure services and proper resources to run their operations. In addition, IT subject matter experts offer technical feedback for potential OIA investigation cases. The CDCR Information Security Office, CDCR Desktop Support in conjunction with CDCR business and legal units and CHP actively work together to address information security risks and incidents. This collaboration between offices is the first of its kind within CDCR.

Driving Cybersecurity Standards Statewide

CDT's Office of Information Security released Statewide Information Management Manual (SIMM) 5355-A, Endpoint Protection Standard, a set of minimum endpoint security requirements state agencies must abide by for protection, detection, investigation, containment and remediation. It requires all State agencies and entities to have specific, additional capabilities to protect endpoint devices such as desktops, cell phones, and personal computers. At the same time, the Department of General Services augmented the leveraged procurement agreement known as the Software Licensing Program (SLP) to include the first of several innovative Endpoint Protection Platform (EPP) vendors with products capable of meeting the newly created SIMM 5355-A standard. The result: SLP Plus, featuring collective, bundled pricing to ensure users access to advanced anti-malware protection.

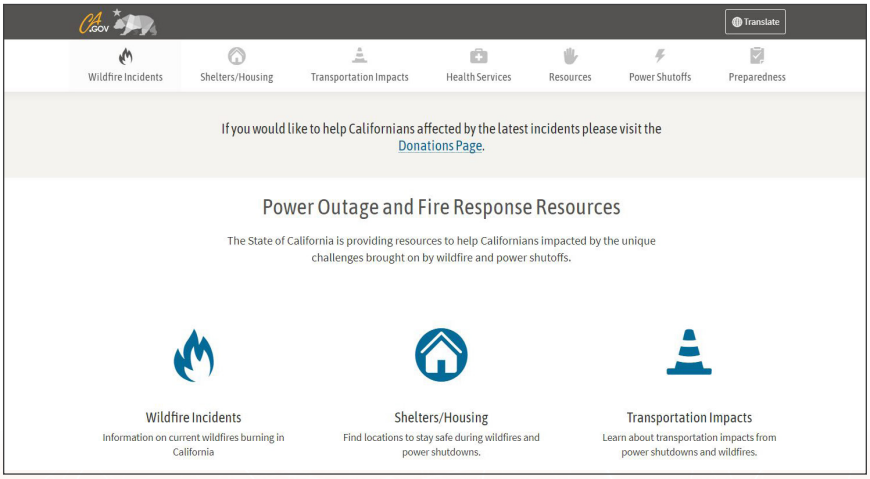
Learn more about SIMM 5355-A at: https://cdt.ca.gov/wp-content/uploads/2019/01/SIMM-5355-A.pdf

The California Department of Transportation (Caltrans) was one of the first State departments to purchase an EPP solution that complies with SIMM 5355-A using the newest vendor/product additions to the SLP. In less than two months, Caltrans deployed the EPP solution to desktops statewide, including all network locations and district offices. Almost immediately, the solution began detecting and stopping cybersecurity attacks against Caltrans' systems.

Emergency Response Website Launched for Those in Need

Violent wildfires and utility-driven power shutoffs forced Californians to face a series of potentially dangerous situations where standard lines of communication and the ability to travel were sharply curtailed. Knowing where to find current information about incidents affecting areas and neighborhoods, who to call for assistance, and other important questions where lives could hang in the balance was a challenge for many.

Realizing that information is a vital tool for people in such situations, several state partners, including the California Governor's Office of Emergency Services and CDT, developed the website 'response.ca.gov' in one day. This is a web portal that puts local and state resources into a single location with useful information during man-made or natural emergencies. The one-stop portal is updated with the latest information and includes new resources as they become available so residents and visitors can find information related to wildfires, shelter/housing, transportation, health services, preparedness tips and much more.



For more information, visit: Response.ca.gov

Did You Know?

CDT's Security Rating Service provides all state entities continuous, independent, and quantitative technical analysis and scoring for digital assets that interact with California residents. The service provides immediate and continuous, automated risk assessments of any organizational assets versus point-in-time snapshots.

Next Generation 911 System to Keep Pace with the Emergencies of Tomorrow

While the existing 911 system has protected Californians for more than 40 years, it has been stretched beyond its limit. The current system doesn't integrate efficiently with today's newer technologies and lacks the reliability and monitoring capabilities needed to support an ever increasing disaster environment.

The California Governor's Office of Emergency Services (Cal OES) has selected four contractors to upgrade the outdated 911 system to a Next Generation 911 platform. The effort to modernize the 911 system across the state will introduce proven state-of-the-art technology to ensure California is better prepared to assist those in need during emergencies and natural disasters. The ultimate end result will be that the new Next Generation 911 will save lives.

Emergency Operations Center (Source: CalOES.ca.gov)

Nothing Fishy about Department of Fish and Wildlife's Public Safety Project

The California Department of Fish and Wildlife (CDFW) Inform Record Management System (RMS) is an online public safety tool.

The RMS replaces previous paper forms and allows over 400 sworn officers to submit and retrieve data from their mobile devices, such as department mobile phones and/or tablets. The project is valuable during public contact to verify identity, hunting/fishing license information or tags and potential criminal records. One of the system's most effective features for the officers in the field is that it's easy to select from the thousands of potential violations codes or wildlife and plant species. Additionally, RMS offers the electronic administration of reporting public interactions and contacts, which allows for more complete narratives and information gathering, leading to a thorough and all-inclusive understanding of wildlife activities.

A major benefit of the RMS is its extensive property and evidence tracking module and rapid data retrieval – a benefit to wardens in the field who can now keep their focus on officer safety.

ENABLING SUCCESSFUL PROJECT ESTABLISHMENT AND DELIVERY

As the fifth largest economy in the world, the State of California delivers an array of evolutionary technology projects that meet the demands of 39 million California residents across a large and diverse geography. These projects are vital in providing delivery of efficient and effective services in order for Californians to maintain their quality of life.

Modernizing Procurement through the Request for Innovative Ideas (RFI^2)

In preparing to respond to emergencies quickly, and effectively, the state has undertaken several actions aimed at protecting Californians from the threat of wildfires and other natural disasters. Procurement modernization is one of those innovative actions. Executive Order N-04-19, Request for Innovative Ideas, also known as RFI-Squared (RFI^2), is a key piece of this modernization that engages innovators, entrepreneurs, academia, scientists, vendors, and state experts to collaborate on providing leading-edge solutions without the constraints of traditional Requests for Proposals.

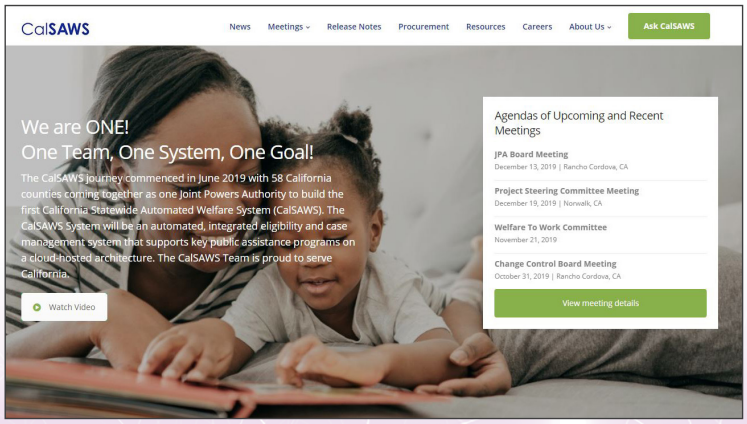
This flexible approach was developed by the Department of General Services (DGS) and California Department of Technology and piloted under the California Department of Forestry and Fire Protection. RFI^2 affords both procurement departments, under Public Contract Code (PCC) 6611, an opportunity to engage with vendors throughout the solicitation to bring new and innovative solutions to current business problems experienced by California State departments. This multi-phased methodology opens up options for departments to receive modern solutions and alternative methodologies, and avoid being hamstrung by lengthy requirements.

The iterative approach offers vendors the opportunity to conduct prototypes, or working models, and conduct demonstrations rather than relying solely on narrative responses. The state benefits by getting a better understanding of the solution's capabilities, functionalities and efficiencies prior to awarding a full contract.

An Epic Solution for Delivering Services

The LEADER Replacement System (LRS) is the California Statewide Automated Welfare System (CalSAWS) case management system for county eligibility staff who provide a vast array of critical state services to children, families and individuals in all 58 California counties. To ensure those services are delivered effectively and securely, the CalSAWS Consortium moved its LRS to the cloud. The move made the LRS the largest integrated eligibility welfare system ever to transition from an on-premise application to the cloud. When considering overwhelming statistics that include 13,500 dedicated users and 4.5 million beneficiaries in Los Angeles County alone; plus 50,000 users and 15 million beneficiaries in all counties, the need for improved scalability and monitoring becomes obvious. It isn't just the sheer size of this project that is impressive, CalSAWS' LRS is also a catalyst for reserve instances of cloud services and exemplifies a continuing and strong state and local collaboration.

Over the next 3 years, CalSAWS will support the largest public assistance system in the country while using flexible and cost-saving cloud-native technologies.



Learn more at: Calsaws.org

The Department of Consumer Affairs (DCA) moved its BreEZe application to the State Data Center's cloud-based platform. BreEZe is the primary licensing and enforcement application used by 18 Boards and Bureaus within DCA. It supports over 2 million licensees and processes more than 900,000 license renewals at $240M annually. By moving to the cloud, DCA will realize considerable cost savings in hardware, software, and staffing hours in the years to come.

Did You Know?

When the City of Los Angeles decided to retire its 30-year old IT hardware infrastructure, it realized a good alternative would be to relocate its applications and data within the State Data Center's cloud-based environment. The move offers the City a large savings by not needing to pay for costly upgrades to its aging equipment, and it not having to face the difficult task of filling technical jobs within its rapidly retiring mainframe staff.

DMV Drives Home Several Payment Options

When California's Department of Motor Vehicles (DMV) began the process that would lead to accepting and processing various kinds of electronic payments, including credit cards, it searched for a vendor that would help make that a reality and improve the experiences of DMV customers.

To make things happen quickly, DMV and CDT collaborated to identify an Electronic Processing Service vendor using one of the State's new, innovative, competitive procurement approaches. Working through this approach, CDT was able to complete the solicitation package in only 5 days and the full procurement in just 6 weeks. Prior to this new approach, this kind of solicitation could take up to 18 months.

As a result, the Davis DMV field office was the first in the state to accept credit cards starting in September. Along with credit card payments, DMV is piloting a program to accept digital wallet payments (Apple Pay, Google Pay and Samsung Pay) at several field offices including Davis, Fresno, Victorville and Roseville.

The program, which is expected to achieve full implementation in 2020, will allow DMV customers the convenience of payment options, reduce fraud, streamline application processes and alleviate wait times.

Transparency in Prescription Drug Costs

According to the Food and Drug Administration, nearly 19,000 prescription drugs are on the market. Drug costs are such a critical concern to legislators, the healthcare community and all Californians that the California Legislature passed Senate Bill 17 (Chapter 603), requiring prescription drug manufacturers to provide 60-day advance notice of certain drug cost increases to prescription drug purchasers and requiring the California Office of Statewide Health Planning and Development (OSHPD) to post specified information on its website. In addition, Governor Gavin Newsom introduced Executive Order (N-01-19), which is aimed at lowering prescription drug costs.

Learn more about the CTRx at: https://oshpd.ca.gov/data-and-reports/cost-transparency/rx/

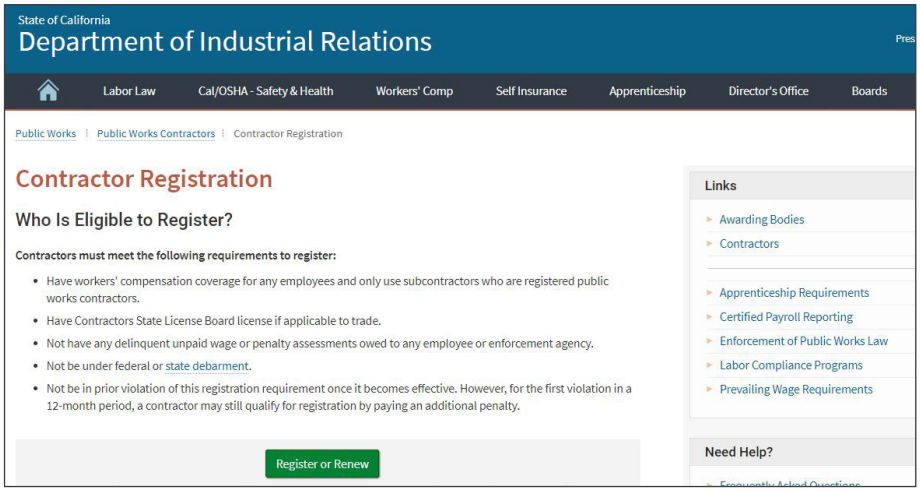
To better track the number of prescription drug costs, OSHPD implemented The Cost Transparency: Prescription Drug (CTRx) solution. The system tracks specified increases in the wholesale acquisition cost of prescription drugs and reports the information to the public, pharmacy benefit managers and other purchasers.

As a result of the CTRx solution, the information provided can help multiple stakeholders understand prescription drug costs, enabling more informed healthcare decisions for the vital prescription drugs which so many Californian's rely on.

Technology Makes Public Works Contractor Registrations Easier

Making sure contractors who work on public projects in California comply with the state's prevailing wage laws is important, and the Department of Industrial Relations (DIR) uses all of its tools including technology to get the job done. Public works reforms in 2014 made several significant changes to the administration and enforcement of prevailing wage requirements. These reforms require all contractors and subcontractors who bid or work on a public works project register and pay an annual fee to DIR.

To aid in this effort, DIR created the Public Works Contractor Registration System, an online application which DIR recently enhanced so that contractors can have full access to their registration records, and can update contractor contact information and workers' compensation insurance coverage online. The system has a public search function that makes contractors searchable by craft, so public works entities can target only the contractors they need.



Visit the Public Works Contractor Registration System at: https://www.dir.ca.gov/Public-Works/Contractor-Registration.html

Improved Benefits Overpayment Collection System Offers Customers Round-the-Clock Access and Convenience

The Benefits Overpayment Collection Automation (BOCA) system replaced the previous manual processes the Employment Development Department used to collect Unemployment and Disability Insurance overpayments. Overpayments occur when customers receive benefit payments that they are later found to be ineligible to receive, so are required to repay.

BOCA is making things easier for staff and customers. Before the system became active, customers needed to contact staff during office hours to obtain or provide routine information related to their accounts, preventing staff from working on high priority accounts and denying customers the ability to self-serve. Once customers become authenticated in BOCA, they are given access to view and update account information, establish payment arrangements, view history, and make payments. Besides saving staff and customers valuable time, BOCA is anticipated to collect an additional $23 million in its first year of operation.

Did You Know?

The California Broadband Council's (CBC) mission to deliver high-speed broadband to unserved and underserved areas throughout California took another step forward. Assembly Bill 488 (Chapter 426, Statutes of 2019) expands CBC's membership to include the Secretary of Food and Agriculture, State Librarian and the Governor's Tribal Advisor. These additions will further CBC's efforts towards digital equity to achieve Broadband for All.

Did You Know?

The State of California established an individual mandate for health insurance and a state subsidy program that will be administered by Covered California and the California Franchise Tax Board.

The program is expected to help hundreds of thousands of Californians by making healthcare more affordable. Nearly half of all enrollees through Covered California have been found eligible and will receive some level of State support to meet their healthcare needs beginning January 1, 2020.

Tracking Discrimination Complaints

The State is committed to fighting workplace discrimination and harassment, and in order to better understand the patterns of misconduct that can be identified and remedied, the California Department of Human Resources (CalHR), in partnership with the California Department of Technology and Government Operations Agency, created the Discrimination Complaint Tracking System (DCTS), a comprehensive cloud-based case management and tracking system.

DCTS provides all Equal Employment Opportunity (EEO) Officers and Investigators with a case management system that stores complaint data in a single and secure location. CalHR uses the data as a tracking and monitoring foundation for complaints filed across state entities.

Since project inception, DCTS has leveraged stakeholder engagements to obtain department feedback and buy-in, and is now used in statewide training for more than 150 departments.

Innovative Food Safety Projects

The California's Department of Food & Agriculture food inspection and safety programs continue to develop and incorporate new technologies that provide them with top-notch services to support a safe, abundant and quality food supply.

- **The Shell Egg Food Safety (SEFS) Inspection Mobile Application** provides Egg Safety and Quality Management program staff with a tool to collect shell eggs and egg product inspection data electronically. The SEFS app also stores and retrieves the information in a central database, discontinuing the practice of paper-based inspection processes.
- **The Almond Certification System (ACS)** project was developed to collect and serve as a central database for the State's almond inspection data, which is used by a number of state and federal agencies. To put into perspective the importance of the ACS, the Almond Sampling Verification Program conducts more than 100,000 inspections on over 2.4 million pounds of almonds and collects in excess of $2.5 million in fees annually.
- **The Milk Dairy Food Safety (MDFS) Automated Sampling Submission** project is a mobile application to help MDFS inspectors ensure that approximately 750 dairy farms, 470 processing plants, 400 pasteurizer units, 1,000 milk tanker trucks and 5,000 soft serve ice cream facilities are safe and compliant. The app can leverage existing database systems through mobile devices for routine sampling.

FOSTERING A DYNAMIC AND UNIFIED TECHNOLOGY WORKFORCE

California's vast array of public technology requires a highly skilled pool of technical workers and strategic leaders to meet the ever-evolving needs of government services. As California continues to expand its technical capabilities, it will be required to bring onboard and develop more leaders that are technical and functional experts through education, apprenticeships, and technical training and leadership academies to help state entities fulfill their missions.

California Cybersecurity Career Education Pipeline and Pathway Project

Protecting the sensitive data of California residents is one of the most important jobs in information technology today. So then, what do we do about the estimated shortage of 70,000 cybersecurity professionals statewide?

In response to this challenge, CDT and Cal OES are playing an active role in co-chairing the Governor's Cybersecurity Task Force. CDT is also active in the Workforce Development and Education Sub-committee, chaired by California State University, Fresno. The ongoing objective of the sub-committee is to develop and implement a California Cybersecurity Career Education Pipeline and Pathway Project.

The project will function across all education levels (K-12, community colleges, and universities) address the need for strategic workforce development and education preparation to serve critical statewide cybersecurity workforce and capability/skill gap needs. This includes assisting in the development of a cybersecurity model curriculum and academic standards, extra-curricular activities, cyber-competitions, apprenticeships, professional and career development, and related areas to build a solid, linked career pipeline/pathway to serve the State of California.

Groundbreaking Mainframe Apprenticeship Program

One of the many reasons the City of L.A. decided to relocate its legacy IT systems to the State Data Center was that its mainframe workforce was at retirement age and recruitment to fill such specialized positions would prove a major challenge, requiring governments to have a trained mainframe workforce.

A new, groundbreaking apprenticeship program, zSystems Apprenticeship Pilot Program, aims to fill the mainframe jobs pipeline with more skilled workers who will receive on-the-job training, mentoring and classes – all while earning a paycheck in an "earn while you learn" model.

Together with several other state agencies and using IBM's gold standard apprenticeship framework, CDT is working to build a new corps of professionals with sought-after mainframe skills that can fill demanding civil service jobs.

The unique apprenticeship program is a collaboration among several partners, including the California Government Operations Agency, Employment Development Department, California Labor and Workforce Development Agency, California Department of Technology, Franchise Tax Board, California Department of Industrial Relations, Department of Motor Vehicles, and SEIU Local 1000.

The mainframe is critical to government and commercial databases, transaction servers, and applications that require high reliability, scalability, compatibility and security.

The California Health and Human Services (CHHS) Agency launched its first agency-wide Data Literacy Survey. The survey signaled the importance of data literacy to all staff, provided a CHHS blueprint for data literacy, and measured current knowledge and use of tools, to identify opportunities for staff development. The results will improve CHHS program outreach, service delivery and ultimately, clients' lives.

Did You Know?

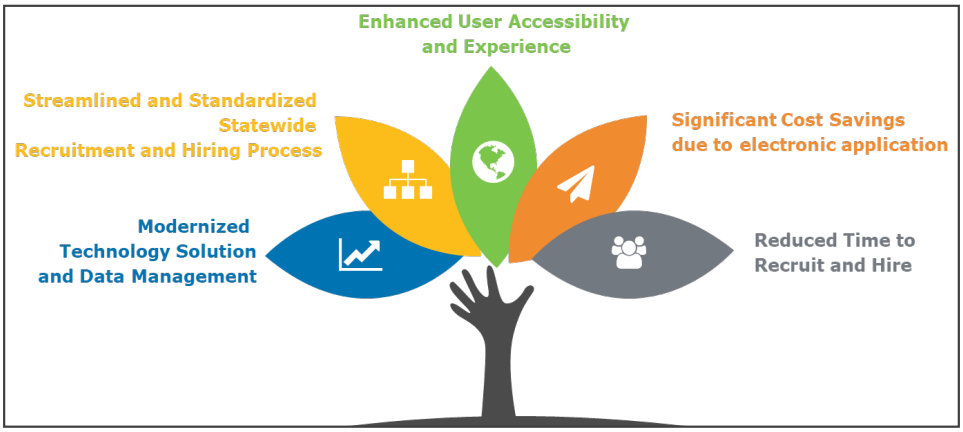
The Digital Services Innovation Academy (DSIA) introduced students to the tools and skills required to transform a business problem from concept to product. All students participated in a digital services team challenge to apply concepts and knowledge they learned. The amazing array of project ideas included digital California currency for public assistance, an embellished Amber Alert using cloud-based GIS on mobile phones, and a homeless assistance app employing blockchain technology.

Nationally Recognized Examination and Certification Online System

The Examination and Certification Online System (ECOS) was a finalist in the National Association of State Chief Information Officers (NASCIO) "Enterprise IT Management" award category.

Attracting qualified workers to fill State jobs is a full-time job in itself. California Human Resources (CalHR) state jobs website, CalCareers, and its administrative counterpart, the Examination and Certification Online System (ECOS), provide departments statewide with the ability to create job and exam bulletins. The CalCareers/ECOS system allows departments to certify applicants' eligibility for hire and review electronically submitted job application packages.

Since January 2016, over 4 million job applications have been submitted electronically, saving a significant amount of time and money for both job seekers and the State. In addition to this innovative process improvement, the system also saves time and postage costs by giving departments the ability to respond to applicants electronically.



CalCareers and ECOS offer several benefits that provide high-impact business values.

Apprenticeship Online Submission Cuts Workload from Weeks to Minutes

How do you track and service more than 93,000 apprentices across a variety of occupations? The answer was technology for the Division of Apprenticeship Standards in California's Department of Industrial Relations, that partners with employers to develop a skilled workforce with viable career pathways to increase productivity and strengthen our state's economy. The tracking and service system the division deployed allows employers and education agencies to file apprenticeship agreements and completion certificate requests electronically.

Apprenticeship agreements are submitted in real time and posted to DIR's website to verify apprenticeship qualification status. The process used to take weeks to submit hardcopy files and for staff to manually enter related data into the department's legacy IT system.

The new, online submissions system makes it easy for entities with apprenticeship programs to submit files directly from their databases and use DIR's online system as the system of record. The automated submission system improves time management and recordkeeping tasks for apprenticeship program providers who offer participants experience through paid on-the-job training and education.

PROVIDING EFFICIENT AND EFFECTIVE GOVERNMENT SERVICES THROUGH INNOVATION

California is nationally recognized for delivering agile and innovative information-supported business programs and processes that improve efficiency. CDT strives constantly to illustrate how state government can apply innovative solutions to meet the public's evolving needs, enrich customer experiences and improve critical technological applications.

The OCRBot Helps Move "California for All" Closer to Reality

To ensure everyone in California can access state websites, Assembly Bill 434 committed California's government to certify all content on state agency websites, as well as the websites themselves, are accessible to everyone. Thus, millions of documents and thousands of websites needed to be remediated, or made accessible for everybody, including those with disabilities.

To assist state agencies in meeting AB 434 requirements, CDT and the Department of Rehabilitation (DOR) identified an opportunity to provide statewide support by developing a tool that would help state agencies remediate large volumes of scanned documents quickly. The result: the OCRBot.

The OCRBot works by implementing a combination of Artificial Intelligence and Optical Character Recognition (OCR) to distinguish words in scanned document images and overlay text-readable data onto the image. This makes the documents text searchable, accessible, and readable to assistive technologies, such as screen readers.

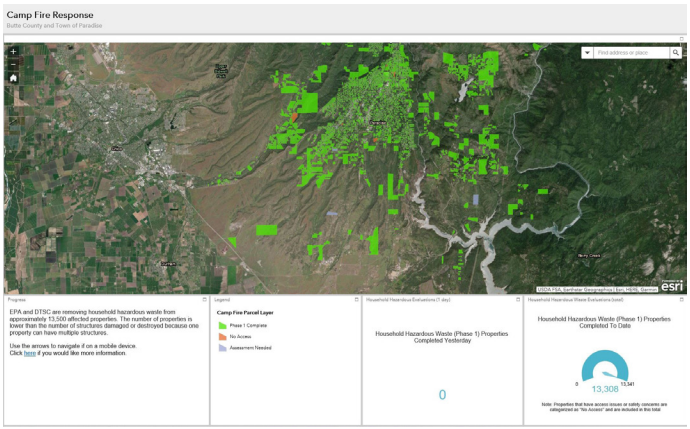
While the OCRBot significantly reduces the average manual page remediation time, a human operator must still ensure the remediated documents meet the minimal standard before they are posted to a website.

Emergency Management Innovation Project Wins National Tech Award

The Emergency Management Innovation Project received the NASCIO "Information Communications Technology Innovations" award.

In response to the recent wildfires that ravaged California, the California Department of Toxic Substances Control (DTSC) developed the Emergency Management Innovation Project.

The Project delivers an innovative emergency response solution that includes a series of geospatial dashboards, mobile field-ready applications and web-based mapping tools to replace its outdated paper-based checklists and inventory forms.



The Emergency Management Innovation Project provides the public with real-time operational information through live geospatial dashboards.

The project's Geographic Information System application improved public information, transparency and stakeholder engagement value, which became evident quickly after the department posted the status on a parcel-by-parcel map of household hazardous waste cleanup sites. This gave workers greater efficiency and offered the public a visual update on the progress. The improved business process gave a new way to keep field crews, the public and other organizations apprised of each day's work.

According to then Acting DTSC Director Meredith Williams, approximately 25 percent of the state's population lives in areas at very high or extreme risk from wildfires. "Anything that increases the team's efficiency helps people affected by these tragedies get back in their homes faster," she said.

Improving Cannabis Licensing Processes

The Governor's Office, California Department of Technology and California Health and Human Services' Office of Innovation have partnered to improve the efficiency and transparency of California's cannabis licensing and enforcement processes for the benefit of consumers, the cannabis industry and state staff that support these programs.

As part of this collaborative partnership, all three cannabis licensing entities – Bureau of Cannabis Control, California Department of Public Health, and California Department of Food and Agriculture – dedicated program staff to participate in a human-centered design approach, where business processes are reviewed through the eyes of the customer, to include customer input, data analysis and visualization to gain a deeper understanding of the projects 'pain points' and where improvements could be made.

These teams also used agile processes to deliver value through incremental development of business process maps and prototypes of potential solutions, and continued to refined the prototypes based on user feedback in short time-boxed sprints.

The outcomes of this initiative will provide tremendous value to the Governor's Office by establishing a roadmap leading to further improvements to cannabis programs and services, specifically designed from a user-centered perspective.

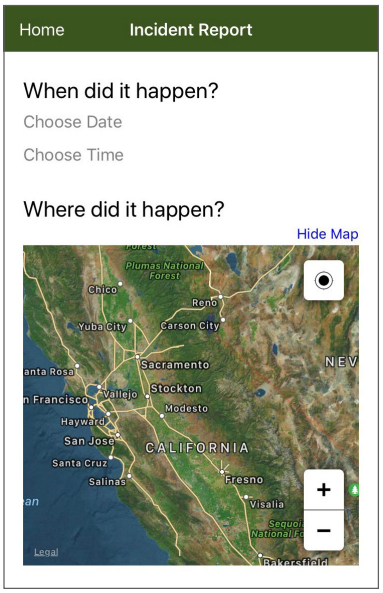
CASPIR Makes Reporting Pesticide Incidents Easy

The California Department of Pesticide Regulation (CDPR) has developed a free mobile app designed to help people report pesticide incidents and concerns quickly. The app is compatible with smart phones and tablets. The free app is available on the department's website.

Called CASPIR (California's System for Pesticide Incident Reporting), the app is for anyone who might be exposed to pesticides; including farmworkers, restaurant workers, custodians and residents reporting incidents.

Available in both English and Spanish and featuring a Global Positioning System, CASPIR allows users to fill in details about the incident, upload photos and videos to assist the inquiry. The app will then pinpoint the user's location.

CDPR receives about 300 pesticide complaints annually and anticipates CASPIR will improve processing, tracking, and timeliness of initiating pesticide investigations. Information submitted by users will be treated as confidential and sent to CDPR's enforcement staff and the relevant local county agricultural commissioner.



The free CASPIR app is available at: www.cdpr.ca.gov or it can be downloaded from Google Play and the Apple iTunes store.

Unlocking the State's Geographic Data Assets

The Statewide Geoportal was developed in under two months and launched on December 23, 2019. The first of its kind, and a key part of the state's data strategy, the Geoportal provides greater access and utility to the state's data portfolio. The Statewide Geoportal connects geographic data from multiple sources into a single, consolidated portal, allowing users to search, discover and articulate the state's vast mapping data points from a central location. The Geoportal also provides guidance, training and support for the state's GIS community.

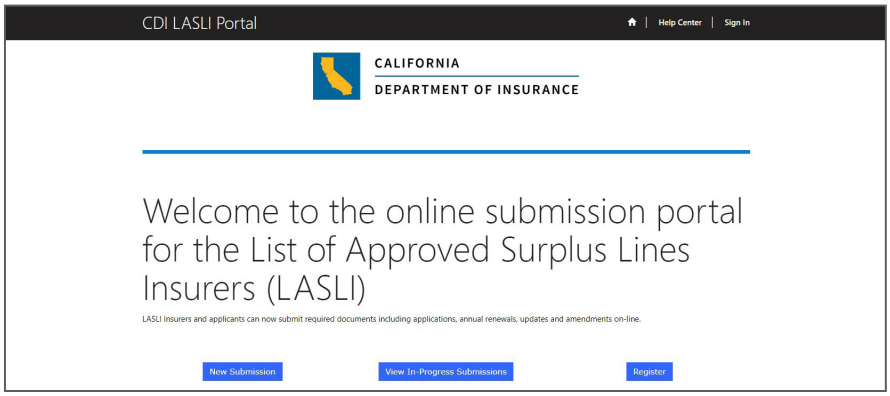
The development of the Geoportal included broad representation across state government through a taskforce comprised of GIS professionals from the Health and Human Services Agency, Environmental Protection Agency, Natural Resources Agency, Transportation Agency, Department of Food and Agriculture and an additional seven executive branch entities. This task force helped communicate the goals and objectives of the Geoportal and coordinated departmental participation by creating standards and managing the curation of geographic data resources. This effort also engaged a key vendor partner, Esri Inc., to ensure the initiative extended beyond the typical IT circles and included program areas that leverage GIS technology.

Customized Portal Offers List of Approved Surplus Lines Insurers Greater Security

The List of Approved Surplus Lines Insurers (LASLI) Portal is an innovative digital government-to-business portal that offers collaboration on California Department of Insurance (CDI)'s documentation submission requirements for Surplus Lines Insurers and, when necessary, online payment. The LASLI Portal solution includes a cloud-based, open source, custom portal connected to a mainstream customer relationship management system accessible by desktops, phones, and tablets.

CDI's LASLI Portal has a high first-year adoption rate, connects multiple categories of government and businesses, helps guard billions of California consumer dollars, eliminates paper submissions, keeps highly sensitive information secure, increases speed and accuracy of business submissions with government and allows business to reference documents filed with the National Association of Insurance Commissioners.

The Portal solves the critical government-to-business problem of a business submitting a collection of highly confidential documentation requirements for a fee and needing government review and approval. With LASLI, documents can be electronically and securely "shipped" to Sacramento, San Francisco, and Los Angeles.



Visit the LASLI Portal: https://cdilasli.insurance.ca.gov

Advancing the Value of Government Data

The State of California is committed to unlocking the value of government data to propel innovation, improve the delivery of public services, and empower the people of California while protecting privacy. To support this commitment the California Department of Technology, under the leadership of GovOps, issued the Open Data Policy (Technology Letter 19-01). This policy furthers open data adoption by requiring Agencies/ state entities manage data as an asset to increase operational efficiencies, enhance performance planning, improve services, support mission needs, inform policy decisions, safeguard personal information, and increase public access to valuable government information. Open data is public data collected by the state through its routine business activities and published in a format that is easy to search, easy to download and easy to combine with other data sets from other sources; it does not include private or confidential data about individuals. Open data is inventoried and made discoverable through data.ca.gov, the state's central data repository.

To improve communication and interdepartmental collaboration, state entities and respective mailboxes were migrated to a single statewide cloud-based email system. Customers utilizing the on-premises and cloud email services provided by CDT was completed in early 2018, while other departments are continuing to move from their on-premises email to the cloud.

Did You Know?

In an effort to segue into a paperless environment and make it easier for the vendors to sign IT contract documents, CDT's Office of Statewide Technology Procurement (STP) implemented "eSignature." eSignature significantly lessens the routing time for contract approvals, enhances security and lowers transactional costs. It has modernized the way the vendor community interacts with STP.

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Mark Ghilarducci, *Director, California Governor's Office of Emergency Services*
Marybel Batjer, *President, California Public Utilities Commission*
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Tim Garza, *Agency Chief Information Officer, California Natural Resources Agency*

We would also like to thank California Department of Technology staff
for contributing to the development of this report.

ABBREVIATIONS AND ACRONYMS

ACS	*Almond Certification System*
BOCA	*Benefits Overpayment Collection Automation*
CalHR	*California Department of Human Resources*
CalSAWS	*California Statewide Automated Welfare System*
Caltrans	*California Department of Transportation*
CASPIR	*California's System for Pesticide Incident Reporting*
CBC	*California Broadband Council*
CDCR	*California Department of Corrections and Rehabilitation*
CDFW	*California Department of Fish and Wildlife*
CDI	*California Department of Insurance*
CDPR	*California Department of Pesticide Regulation*
CDT	*California Department of Technology*
CGEN	*California Government Enterprise Network*
CHHS	*California Health and Human Services Agency*
CTRx	*Cost Transparency: Prescription Drug*
DCA	*Department of Consumer Affairs*
DCTS	*Discrimination Complaint Tracking System*
DGS	*Department of General Services*
DIR	*Department of Industrial Relations*
DMV	*Department of Motor Vehicles*
DOR	*Department of Rehabilitation*
DTSC	*California Department of Toxic Substances Control*
ECOS	*Examination and Certification Online System*
EDD	*Employment Development Department*
EEO	*Equal Employment Opportunity*
EPP	*Endpoint Protection Platform*
FAST	*Forensic Analysis and Support Team*
FSR	*Feasibility Study Report*
GIS	*Geospatial Information Systems*
IaaS	*Infrastructure as a Service*
IT	*Information Technology*
LASLI	*List of Approved Surplus Lines Insurers*
LRS	*LEADER Replacement System*
MDFS	*Milk Dairy Food Safety*
NASCIO	*National Association of State Chief Information Officers*
OCR	*Optical Character Recognition*
OIA	*Office of Internal Affairs*
OSHPD	*Office of Statewide Health Planning and Development*
PaaS	*Platform as a Service*
PAL	*Project Approval Lifecycle*
PCC	*Public Contract Code*
PII	*Personally Identifiable Information*
RFI²	*Request for Innovative Ideas*
RMS	*Record Management System*
SaaS	*Software as a Service*
SEFS	*Shell Egg Food Safety*
SIMM	*Statewide Information Management Manual*
SLP	*Software Licensing Program*
SOC	*Security Operations Center*
SPR	*Special Project Reports*
STP	*Statewide Technology Procurement*
VHSS	*Vendor Hosted Subscription Services*

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